HISTORIC AMERICAN ENGINEERING RECORD

HAER CAL. 21-5 AUS, 1-

Index to Photographs

Steam Tug WAPAMA
Army Corps of Engineers Dock
San Francisco National Historical Park
Sausalito
Marin County
California

HAER No. CA-67

NOTE: Photographs were taken by Jet Lowe, HAER Photographer, April 1988

CA-67-1	VIEW OF STARBOARD ELEVATION
CA-67-2	VIEW SHOWING PORT ELEVATION OF WAPAMA , WITH SCOW SCHOONER ALMA IN FOREGROUND
CA-67-3	STERN VIEW OF WAPAMA AND ALMA, LOOKING OFF PORT QUARTER
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ADDENDUM TO: HAER CA-67

STEAM SCHOONER WAPAMA

(TONGASS)

San Francisco Maritime National Historical Park

Kaiser Shipyard No. 3 (Shoal Point)

Richmond

Contra Costa County

California

Photos 39-82 were taken while the boat was dry-docked on a barge in Richmond, California. Photos 83-90 were taken at the park storage facility in Alameda, California.

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Todd A Croteau, photographer, 2010

3/4 view of port side elevation from bow to stern.
Port side elevation.
Detail of port side elevation aft showing deckhouse and stern.
3/4 view of starboard side showing deckhouse and stack.
3/4 view of starboard side from bow to stern showing detail of bow. The bow is heavily rotted and twisting to starboard.
Detail elevation of starboard side with rot visible.
3/4 view of port side from stern to midship area.
3/4 view detail of port side at stern.
Same view with LIDAR scanning crew (Scott Curry and D'Arcy Trask).
Same view with Dana Lockett, Scott Curry, and D'Arcy Trask.
Detail of port side hull from below looking forward along keel and turn of bilge. Note the stepped garboard planks (first two planks from keel) and the "hog" in the keel.
Detail of hull at prop shaft and rudder aperture looking forward along port side.

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CA-67-51	Interior of main hold looking forward along port side. Note the metal brackets and beams above supporting the tween deck. Frames can be seen where a ceiling plank was removed.
CA-67-52	Interior detail at forward bulkhead looking to starboard. Deck knees seen above and diagonal pointers can be seen at center.
CA-67-53	Interior detail at forward bulkhead from starboard side looking forward towards deck knees with water tank to left.
CA-67-54	Interior detail of pilot house showing steering wheel system.
CA-67-55	Interior detail of pilot house with steering wheel.
CA-67-56	Interior detail of pilot house looking forward from chart room to helm station.
CA-67-57	Interior detail of pilot house looking aft from chart room to stack.
CA-67-58	Detail of steering system components located on the port side of the cabin deck below the pilot house. Steering cables are at the center and then transition through sheaves to run down the side of the deckhouse.
CA-67-59	Detail of steering system along starboard side looking aft. Cable is at center running along deck and through deckhouse.
CA-67-60	Detail of steering quadrant seen from port side. Wood base in the foreground was for a steam-powered capstan.
CA-67-61	Detail of steering quadrant from port side.
CA-67-62	Detail of lounge door with lighting above.
CA-67-63	Detail of door hardware.
CA-67-64	Interior of dining salon looking to port. Swivel chairs are mounted to the floor.
CA-67-65	3/4 view looking forward of port side boat deck and deckhouse with captain's cabin door in foreground.
CA-67-66	Detail of captain's cabin door.
CA-67-67	Interior of captain's cabin looking to port towards the bunk.

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CA-67-68	Interior of captain's cabin looking to starboard towards the settee.
CA-67-69	Detail of electric lamp in captain's cabin. Note the paneling and moldings also.
CA-67-70	Office located in captain's cabin.
CA-67-71	Washroom and dresser in captain's cabin.
CA-67-72	Interior of wireless operator's room (room 4), looking to port.
CA-67-73	Interior of chief engineer's cabin (room 7), looking to port.
CA-67-74	Interior of passenger cabin (room 12 on cabin deck) with double bunk below and single bunk above.
CA-67-75	Additional interior view of captain's office.
CA-67-76	Additional interior view of captain's wash room.
CA-67-77	Interior of passenger cabin with triple bunks (room 11 on boat deck).
CA-67-78	Bunk/storage area aft of dining salon on main deck. Stern framing seen at top.
CA-67-79	Bunk/storage area aft of dining salon on main deck. Stern framing seen at top.
CA-67-80	Detail of bridge wing on port side looking forward.
CA-67-81	Detail of bridge wing from inside the chart room looking to port.
CA-67-82	Detail of taffrail log bracket on stern rail. Wood base may have supported taffrail equipment.
CA-67-83	Wood lifeboat from WAPAMA (bottom boat). 3/4 view of starboard side.
CA-67-84	Detail of stern/transom of wood lifeboat.
CA-67-85	Detail of wood lifeboat interior. Note the metal air tanks located beneath the seats for buoyancy.
CA-67-86	Detail of wood lifeboat interior looking forward. Note the buoyancy tanks under the seats.
CA-67-87	Detail of wood lifeboat from bow looking aft.

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CA-67-88	Detail of wood lifeboat hull markings for "26 persons."
CA-67-89	Starboard elevation of metal lifeboat for WAPAMA (on bottom).
CA-67-90	Detail of stern of metal lifeboat. Note the riveted metal "planks."

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ADDENDUM TO: STEAM SCHOONER WAPAMA (TONGASS) San Francisco Maritime National Historical Park Kaiser Shipyard No.3 (Shoal Point) Richmond Contra Costa County California

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Photographs by Kim Harrington, May-August 2013

FROM WWII.

Note: Photographs CA-67-91 through CA-67-179 are an addendum to previous photographs submitted. These photographs were taken while the ship was being dismantled due to its deteriorated condition.

CA-67-91	BEFORE DEMOLITION, STERN QUARTER PORT SIDE. NOTE THE WHITE PAINT WAS USED TO CONSOLIDATE ANY LEAD-BASED PAINTS DURING THE DEMOLITION PROCESS.
CA-67-92	BEFORE DEMOLITION, THREE QUARTER VIEW FROM PORT SIDE SHOWING BOW.
CA-67-93	BEFORE DEMOLITION, PORT SIDE STERN TO BOW
CA-67-94	BEFORE DEMOLITION, VIEW FROM RED OAK VICTORY
CA-67-95	STARBOARD SIDE ELEVATION OF WAPAMA SHOWING BOAT DECK AND CABIN DECK AFTER REMOVAL OF CANOPY. DETAILS OF FLYING BRIDGE, STACKS AND WHEEL HOUSE
CA-67-96	VIEW OF MAIN DECK LOOKING FORWARD FROM POSITION OF MAIN MAST AFTER CANOPY REMOVAL.
CA-67-97	VIEW OF MAIN DECK LOOKING FORWARD FROM POSITION OF MAIN MAST ON CABIN DECK AFTER CANOPY REMOVAL.
CA-67-98	VIEW OF PORT SIDE IN DRY DOCK 3 FROM DRY DOCK 4 AFTER REMOVAL OF CANOPY. NOTE HISTORIC DRY DOCK CONSTRUCTION

CA-67-99	VIEW OF STARBOARD SIDE FROM BOW TO STERN AFTER CANOPY REMOVAL.
CA-67-100	BEGINNING OF DEMOLITION. VIEW OF MAIN DECK STARBOARD SIDE FORWARD OF FORECASTLE AFTER CANOPY REMOVAL.
CA-67-101	BEGINNING OF DEMOLITION. VIEW OF MAIN DECK PORT SIDE FORWARD OF FORECASTLE AFTER CANOPY REMOVAL.
CA-67-102	STARBOARD SIDE VIEW FROM BOAT DECK LOOKING FORWARD ON STARBOARD SIDE. JUST AFT OF STACK AND WHEELHOUSE.
CA-67-103	PORT SIDE VIEW OF FLYING BRIDGE, WHEEL HOUSE, STACK AND VENTS.
CA-67-104	PORT SIDE VIEW OF WAPAMA FROM ADJACENT DRY DOCK AFTER CANOPY REMOVAL.
CA-67-105	PORT SIDE ELEVATION AFTER SUPER STRUCTURE AND BEGINNING OF REMOVAL OF STACK.
CA-67-106	HULL DETAIL PORT SIDE WITH OUTER STRAKES REMOVED SHOWING RIB LAYOUT. NOTE TAPE MEASURE.
CA-67-107	VIEW OF SLIDING DOORS OF "CHART ROOM" AFT OF WHEEL HOUSE FROM BOAT DECK.
CA-67-108	VIEW FROM BOAT DECK STARBOARD SIDE LOOKING DOWN TO CABIN DECK AFTER REMOVAL OF UPPER STACK SHOWING AREA WHERE DONKEY BOILER STACK CONNECTS TO MAIN STACK. ALSO DETAIL OF OUTER CASING CONSTRUCTION AROUND MAIN STACK.
CA-67-109	VIEW FROM BOAT DECK AFT OF WHEEL HOUSE SHOWING DETAIL OF STACK CONSTRUCTION. VENT STACK SHOWS IN FOREGROUND. DOOR TO RIGHT LEADS TO FIRST AND SECOND MATES CABIN.
CA-67-110	VIEW FROM BOAT DECK STARBOARD SIDE LOOKING AT AFTER OF CHART ROOM SLIDING DOORS. NOTICE FLY BRIDGE BOTH PORT AND STARBOARD.
CA-67-111	DETAIL OF SHIPS INSIGNIA REMOVED FROM STACK CASING.
CA-67-112	VIEW OF CABIN DECK FROM MAIN DECK LOOKING AFT. MAIN WINCH SAT FORWARD OF MAIN MAST, ALSO NOTE KNEE PLACEMENT.

CA-67-113	VIEW FROM MAIN DECK STARBOARD SIDE LOOKING AFT. SLIDING DOORS ON MAIN DECK LEAD TO BERTHING. CABIN DECK WHERE WINCH WAS FORWARD OF MAST.
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CA-67-116	PORT SIDE FROM STERN LOOKING FORWARD SHOWING DEFORMITY KEEL.
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CA-67-122	DETAIL OF VENT AND GALLEY STOVE PIPE HOUSING LOOKING AFT.
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CA-67-126	BOAT DECK LOOKING AFT. SHOWING ARE BANISTER AND REMAINS OF STAIRWAY TO DINING SALON. ALSO SHOWN AT STERN IS THE TOP OF THE RUDDER POST.

CA-6/-12/	DETAIL OF TOP OF RUDDER POST AND TILLER ON CABIN DECK.
CA-67-128	VIEW OF MAIN DECK AND REMAINS OF CABIN DECK. NOTE TOP OF ENGINE SHOWING. ALSO SHOWN ENGINE ROOM VENT PIPES.
CA-67-129	PORT SIDE OF DINING SALON LOOKING AFT SHOWING UPHOLSTERED DINING BENCH SEATING. ALSO SUPPLY LOCKER AND TOP OF RUDDER POST.
CA-67-130	STARBOARD SIDE OF DINING SALON LOOKING AFT. LEFT TO RIGHT: SALON STAIRCASE, PASSAGEWAY TO ESCAPE HATCH AND STORAGE LOCKER. NOTE REMAINS OF WOOD PANELING.
CA-67-131	MAIN DECK LOOKING AFT SHOWING OUTLINE OF UPPER PART OF ENGINE ROOM AND TOP OF ENGINE. TOP OF RUDDER POST IN DINING SALON AREA, FORMERLY ENCLOSED.
CA-67-132	VIEW OF AFTER SECTION OF MAIN DECK. ENGINE IS BEING PREPARED TO BE LIFTED OUT OF HULL.
CA-67-133	VIEW FROM PORT SIDE RAIL LOOKING FORWARD SHOWING BOW AREA AFTER FORECASTLE HAD BEEN REMOVED. ALSO SHOWN MAIN HATCH.
CA-67-134	ENGINE REMOVAL. THE ENGINE AT 83,000 LBS HAS JUST CLEARED THE MAIN DECK RAIL.
CA-67-135	WAPAMA ENGINE BEING LOWERED TO BARGE FOR TRANSPORT TO SAN FRANCISCO MARITIME MUSEUM.
CA-67-136	WAPAMA ENGINE RESTING ON BARGE WITH LIFTING TACKLE STILL ATTACHED.
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CA-67-139	VIEW LOOKING FORWARD FROM MAIN DECK INTO ENGINE ROOM AND BOILER ROOM AFTER REMOVAL OF EQUIPMENT.

CA-0/-140	BOILER ROOM. OFF CENTER VIEW SHOWS POSITION OF STRUCTURAL POSTS AND KEELSON.
CA-67-141	BOW SECTION PORT SIDE AFTER REMOVAL OF FORECASTLE. STARBOARD ANCHOR CHAIN PIPE AND BITT STILL ATTACHED TO REMAINS OF FORECASTLE DECK.
CA-67-142	STARBOARD SIDE OF HULL FROM STERN AFTER REMOVAL OF SHIPS STRUCTURE. REMAINING HULL SECTION CONTAINING PORTHOLES OF DINING SALON. MARKINGS ON HULL DENOTE AREA OF HAZARDOUS MATERIAL ABOVE KEEL.
CA-67-143	STARBOARD AFTER QUARTER SHOWING DETAIL OF CONSTRUCTION ABOVE HULL LINE. PORTHOLES OF DINING SALON SETTEE.
CA-67-144	INTERIOR STARBOARD SIDE OF DINING SALON PORTHOLES ABOVE WHERE SETTEE HAD BEEN. THIS SHOWS WELL HOW KNEES AND DECKING SUPPORTS WERE CONSTRUCTED. ALSO WHAT REMAINS OF FINISH WORK AROUND PORTHOLES.
CA-67-145	VIEW OF STERN ELEVATION FROM KEEL TO MAIN DECK LINE PRIOR TO DEMOLITION OF HULL.
CA-67-146	DEMOLITION OF HULL STARTED WITH PORT SIDE STERN QUARTER. ENGINE ROOM AFTER STEEL BULKHEAD IS NOW EXPOSED. PLYWOOD COVERING OF RUDDER PARTIALLY REMOVED SHOWING RUDDER CONSTRUCTION.
CA-67-147	VIEW LOOKING AFT SHOWING MAIN DECK PLANKING WHERE IT MEETS HORN TIMBER AT THE STERN.
CA-67-148	STERN AREA DEMOLISHED DOWN TO PROPELLER SHAFT. STEEL AFTERPEAK BULKHEAD OF ENGINE ROOM IS NOW EXPOSED. PROPELLER SHAFT LAYS ACROSS KEEL.
CA-67-149	VIEW FROM PORT SIDE SHOWS ENGINE ROOM AREAS AFTER REMOVAL OF AFTERPEAK BULKHEAD. PROPELLER SHAFT LAYS ACROSS KEEL AT RIGHT.
CA-67-150	VIEW FROM PORT SIDE SHOWING ENGINE ROOM AREA. VISIBLE IS STARBOARD FUEL TANK. KNEES, POST AND BEAM CONFIGURATION

CA-67-151	WATER TANK REMOVED FROM FORWARD HOLD UNDER FORECASTLE VIEW #1
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CA-67-157	ENGINE ROOM ELECTRICAL PANEL.
CA-67-158	FORWARD HATCH STILL WITH SHIPS REGISTER MARKED ON 2" IRON BARK CHAFING PLANKS.
CA-67-159	DETAIL OF HULL KNEE SHOWING FASTENERS.
CA-67-160	DETAIL OF HULL KNEE FACING SHOWING FASTENERS
CA-67-161	VIEW LOOKING FORWARD AFTER STERN SECTION OF VESSEL HAD BEEN REMOVED. VISIBLE ARE POSTS THAT MARKED SEPARATIONS OF FIREROOM AND ENGINE ROOM. ALSO SHOWN STEEL BULKHEAD FORWARD OF FIRE ROOM.
CA-67-162	VIEW OF STARBOARD SIDE OF SHIP SHOWING KNEES AND PLANKING. ALSO SHOWN IS EXCAVATOR CLAW IN ACTION. THE EXCAVATOR WAS THE MAIN MEANS USED TO DEMOLISH THE WAPAMA.
CA-67-163	CLOSE-UP VIEW OF STARBOARD HULL CONFIGURATION. POST TO LEFT MARKED SEPARATION OF FIRE ROOM FORWARD AND ENGINE ROOM AFT OF POST.
CA-67-164	VIEW FROM PORT SIDE LOOKING ACROSS TO STARBOARD SIDE HULL IN MAIN HOLD OF SHIP. IN FOREGROUND ARE VISIBLE ENDS OF FRAME WITH STRAKES AND INTERIOR PLANKING.

CA-6/-165	PART OF HULL ALSO HAD SISTER FRAMES FOR HULL STRENGTH.
CA-67-166	VIEW MIDSHIP STARBOARD SIDE OF HULL SHOWING HOW STRAKES WERE ATTACHED AND FRAME CONSTRUCTION.
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CA-67-170	LAST REMAINING SECTION OF HULL, STARBOARD SIDE.
CA-67-171	LAST REMAINING SECTION OF HULL FROM MAIN RAIL THROUGH MAIN DECK IN FIRE ROOM AREA.
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CA-67-173	DETAIL OF MIDSHIP HULL CONSTRUCTION.
CA-67-174	EMPTY BARGE AS LAST OF WAPAMA DEBRIS IS REMOVED.
CA-67-175	WAPAMA ENGINE RESTING ON PAD AT SAN FRANCISCO MARITIME MUSEUM. VIEW OF FORWARD END OF ENGINE WITH CONTROLS ON THE LEFT SIDE.
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CA-67-177	PORT SIDE AND AFTER VIEW OF WAPAMA ENGINE. VISIBLE IS THE CONNECTION TO THE PROPELLER SHAFT.
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CA-67-179	WAPAMA PROPELLER SHAFT (LEFT TO RIGHT) CONNECTION TO AFTER PROPELLER SHAFT. SECTION OF PANEL WHERE SHAFT PASSED THROUGH AFTER PEAK BULKHEAD. TURBINE GEAR, THRUST BEARING AND CONNECTION TO ENGINE.